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मानक

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“पुराने को छोड़ नये के तरफ”

Jawaharlal Nehru

“Step Out From the Old to the New”

IS 8271-3-6 (1982): Quartz Crystal Units Used in Oscillators, Part 3: Series BC, Section 6: Quartz Crystal Unit Type BC-06 [LITD 5: Semiconductor and Other Electronic Components and Devices]



“ज्ञान से एक नये भारत का निर्माण”

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“Invent a New India Using Knowledge”



“ज्ञान एक ऐसा खजाना है जो कभी चुराया नहीं जा सकता है”

Bhartrhari—Nitiśatakam

“Knowledge is such a treasure which cannot be stolen”

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Indian Standard

SPECIFICATION FOR QUARTZ CRYSTAL UNITS USED IN OSCILLATORS

PART III SERIES BC

Section 6 Quartz Crystal Unit Type BC-06

0. General — This standard shall be read in conjunction with IS : 8271 (Part I)-1981 Specification for quartz crystal units used for frequency control and selection: Part I General requirements and tests (*first revision*).

1. Outline and Dimensions — Holder outline shall conform to Type BC (*see* sheet 5 of IS : 4570-1968 Specification for crystal holders).

2. Marking — *See* 8 of IS : 8271 (Part I)-1981.

3. Material, Construction and Workmanship — *See* 7 of IS : 8271 (Part I)-1981.

4. Test Schedule and Detail Requirements

4.1 General Conditions for Test — *See* 9.2 of IS : 8271 (Part I)-1981.

4.2 Test Schedule — The sequence and grouping of type, routine and acceptance tests shall be in accordance with 9.1 of IS : 8271 (Part I)-1981.

4.3 Detail Requirements — The detail requirements applicable to this particular type of crystal unit shall be as specified in Table 1.

TABLE 1 DETAIL REQUIREMENTS OF QUARTZ CRYSTAL UNIT TYPE BC-06

Characteristics (1)	Requirement (2)
a) Type of holder	BC (<i>see</i> 1)
b) Frequency range	5 to 20 MHz
c) Frequency tolerance :	
i) Room temperature	± 70 ppm
ii) Operating temperature range	± 20 ppm
d) Frequency stability	± 5 ppm
e) Resonance resistance	<i>See</i> Table 2
f) Mode of oscillation	Fundamental
g) Load capacitance	30 ± 0.5 pF
h) Capacitance shunt	7 pF, maximum
j) Reference temperature	$75^\circ\text{C} \pm 1^\circ\text{C}$
k) Temperature range :	
i) Operating	$75^\circ\text{C} \pm 5^\circ\text{C}$
ii) Operable	-55°C to $+70^\circ\text{C}$ and $+80^\circ\text{C}$ to $+90^\circ\text{C}$
m) Test set, calibration values and rated drive level	<i>See</i> Table 3
n) Shock [according to 9.15 (Severity A) of IS : 8271 (Part I)-1981] :	
i) Frequency change permitted	± 5 ppm
ii) Resonance resistance change permitted	± 10 percent
p) Vibration [according to 9.16.1 (Severity A) of IS : 8271 (Part I)-1981] :	
i) Frequency change permitted	± 5 ppm
ii) Resonance resistance change permitted	± 10 percent
q) Temperature cycling :	
i) Frequency change permitted	± 5 ppm
ii) Resonance resistance change permitted	± 10 percent
r) Temperature run :	
i) Frequency change permitted	± 5 ppm
ii) Resonance resistance change permitted	± 10 percent
s) Ageing :	
i) Frequency change permitted	5 ppm

Adopted 14 June 1982

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TABLE 2 RESONANCE RESISTANCE

[Table 1 (e)]

Frequency Range	Maximum Resonance Resistance
MHz	Ohms
(1)	(2)
From 5 to 7	75
Over 7 to 10	45
Over 10 to 15	35
Over 15 to 20	30

TABLE 3 TEST SET, CALIBRATION VALUES AND RATED DRIVE LEVEL

[Table 1 (m)]

SI No.	Frequency Range		Calibration Values			Rated Drive Level
			Resistance	Crystal Current	Resistor Voltage Drop	
	MHz		Ohms	mA	V	mW
(1)	(2)		(3)	(4)	(5)	(6)
i)	From 5 to 7.5		25	14	—	5.0 ± 1.0
ii)	Over 7.5 to 10		16	18	—	
iii)	Over 10 to 15		13	20	—	
iv)	Over 15 to 20		12	—	0.24	

For SI No. (i) to (iii) — Test Set TS-330/TSM.
For SI No. (iv) — Test Set TS-683/TSM.